



**UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/048,933	03/26/98	KLEIN	ME 9157-PROTEIN

022835  
PARK, VAUGHAN & FLEMING LLP  
508 SECOND STREET  
SUITE 201  
DAVIS CA 95616

WM21/0511

EXAMINER

ART UNIT PAPER NUMBER

DATE MAILED: 05/11/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/048,933

Applicant(s)

KLEIN, DEAN A.

Examiner

Linus H Lo

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) Substitute PTO-948
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (~~PTO-948~~)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

It is noted that a related co-pending non-provisional application with the title "Apparatus for Assisting Video Compression in a Computer System" is listed in the content of specification on page 1, lines 16-18, however the application number and filing date was not provided.

Thus, appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-7, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Dea '208.

In consider claim 1, Dea discloses a remote video processing system including compression/decompression accelerator. Dea discloses the following claimed subject matter, note 1) the claimed method for compressing video data in a computer system is met by the description at column 4, lines 36-41 and lines 17-19, and FIG. 1, where of the described compression/decompression accelerator 120 performs the compression method;

2) the claimed step of receiving a stream of data from a current video frame in the computer system is met by description at column 6, lines 42-44 and FIG. 2;

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3) the claimed step of computing a difference frame from the current video frame and a previous video frame as the current video frame streams into the computer system is met by the description of the subtraction function of frame difference block 220 (column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2); and

4) the claimed step of storing difference frame in a memory in the computer system is met by the description of buffer 248 at column 9, line 60 - column 10, line 3, and FIG. 2.

In consider claim 2, the claimed storing the current video frame in the memory in the computer system is met by the current frame memory 204 (column 6, lines 42-44, and FIG. 2.)

In consider claim 3, the claimed wherein the current video frame is written over a previous video frame in the memory is met by the current frame memory 204 (column 6, lines 42-44, and FIG. 2.), whereas the current frame memory 204 receives video frame sequentially that the area stores the relatively previous video frame is subsequently replace by the newly received current video frame.

In consider claim 5, the claimed step of computing a difference between a block of data from the current video frame and a block of data from the previous video frame is met description at column 10, lines 53-56 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 described the utilizing of the block of data from the current and previous video frame.

In consider claim 6, the claimed wherein storing the difference frame in memory includes storing the differences frame in the memory in the memory using block transfer is

met by the is met the description at column 10, lines 53 - column 11, lines 7 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 and 11 described the utilizing of the block of data from the current and previous video frame and subsequently recognized that data stored in buffer is in the form of block.

In consider claim 7, the claimed using the difference frame to produce compressed video data is met by the description of FIG. 3A and column 10, line 53 - column 11, line 7, whereof FIG. 3A depicted the frame difference block 220 provides a difference frame and subsequently after the variable length encoding block, the compressed video bitstream 338 is output.

In consider claim 11, the claimed wherein computing the difference frame includes computing the difference frame in a core logic chip within the computer system is met by the compress/decompression accelerator 120 that includes the function frame difference block 220 (column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2)

In consider claim 12, the claimed wherein computing the difference frame includes computing the difference frame in circuitry outside of a central processing unit in the computer system is met by the processor 112 and the compression/decompression accelerator 120 (FIG. 2).

#### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 9, 13-17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208 in view of Abramatic et al. '383.

In consider claim 4, Dea discloses the claimed invention except for the claimed step of computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame.

Nonetheless, Dea teaches that a step of computing *the difference frame* between the current video frame and the previous video frame as discuss above in claim 1. Furthermore, Abramatic et al. teach that a form of compression consists in detecting variations (difference) between on image and the next as described at column 2, lines 53-56. Abramatic et al. discloses the claimed step of computing an exclusive-OR between the current video frame and the previous video frame as met by the description at column 6, lines 52-58, whereof the described previous image at the input 55 and the arrival of new points at the input 57 which are respectively considered as the previous and current video frame.

Since Abramatic et al. teach that XOR function for the difference calculation 56 which has the advantage of providing a less complicated means for the difference calculation techniques as elucidate at column 7, lines 32-35.

Therefore it would have been obvious to one have ordinary skilled in the art at the time the invention was made to recognize the advantage and the claimed the claimed step of

computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame as taught by Abramatic et al. in the system of Dea.

In consider claim 9, Dea discloses the claimed invention except for the claimed using the video data in compressed form in a video conferencing system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the claimed using the video data in compressed form in a video conferencing system in the system of Dea, since examiner takes Official Notices of the commonly well known usage of the compressed video data form in a teleconference system, whereof the compressed video data form is recognized to provide the benefit of bandwidth conservation on a communication system.

In consider claim 13, Dea discloses a remote video processing system including compression/decompression accelerator. Dea discloses the following claimed subject matter, note

- 1) the claimed method for compressing video data in a computer system is met by the description at column 4, lines 36-41 and lines 17-19, and FIG. 1, where of the described compression/decompression accelerator 120 performs the compression method;
- 2) the claimed step of receiving a stream of data from a current video frame in the computer system is met by description at column 6, lines 42-44 and FIG. 2;
- 3) the claimed step of computing a difference frame from the current video frame and a previous video frame as the current video frame streams into the computer system is met

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by the description of the subtraction function of frame difference block 220 ( column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2);

4) the claimed step of storing difference frame in a memory in the computer system is met by the description of buffer 248 at column 9, line 60 - column 10, line 3, and FIG. 2;

5) the claimed storing the current video frame in the memory in the computer system is met by the current frame memory 204 (column 6, lines 42-44, and FIG. 2);

6) the claimed using the difference frame to produce compressed video data is met by the description of FIG. 3A and column 10, line 53 - column 11, line 7, whereof FIG. 3A depicted the frame difference block 220 provides a difference frame and subsequently after the variable length encoding block, the compressed video bitstream 338 is output.

However, Dea does not disclose the claimed step of computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame.

Nonetheless, Dea teaches that a step of computing *the difference frame* between the current video frame and the previous video frame as discuss above in claim 1. Furthermore, Abramatic et al. teach that a form of compression consists in detecting variations (difference) between on image and the next as described at column 2, lines 53-56. Abramatic et al. discloses the claimed step of computing an exclusive-OR between the current video frame and the previous video frame as met by the description at column 6, lines 52-58, whereof the described previous image at the input 55 and the arrival of new points at the input 57 which are respectively considered as the previous and current video frame.



Since Abramatic et al. teach that XOR function for the difference calculation 56 which has the advantage of providing a less complicated means for the difference calculation techniques as elucidate at column 7, lines 32-35.

Therefore it would have been obvious to one have ordinary skilled in the art at the time the invention was made to recognize the advantage and the claimed step of computing the difference frame includes computing an exclusive-OR between the current video frame and the previous video frame as taught by Abramatic et al. in the system of Dea.

In consider claim 14, the claimed wherein the current video frame is written over a previous video frame in the memory is met by the current frame memory 204 of Dea (column 6, lines 42-44, and FIG. 2.), whereas the current frame memory 204 receives video frame sequentially that the area stores the relatively previous video frame is subsequently replace by the newly received current video frame.

In consider claim 15, the claimed step of computing a difference between a block of data from the current video frame and a block of data from the previous video frame is met description of Dea at column 10, lines 53-56 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 described the utilizing of the block of data from the current and previous video frame.

In consider claim 16, the claimed wherein storing the difference frame in memory includes storing the differences frame in the memory in the memory using block transfer is met by the is met the description of Dea at column 10, lines 53 - column 11, lines 7 and column 5, lines 42-47, and FIG. 3A, where the excerpt from column 10 and 11 described the

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utilizing of the block of data from the current and previous video frame and subsequently recognized that data stored in buffer is in the form of block

In consider claim 17, Dea discloses the claimed invention except for the claimed using the video data in compressed form in a video teleconferencing system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the claimed using the video data in compressed form in a video teleconferencing system in the system of Dea, since examiner takes Official Notices of the commonly well known usage of the compressed video data form in a teleconference system, whereof the compressed video data form is recognized to provide the benefit of bandwidth conservation on a communication system.

In consider claim 19, the system of Dea and Abramatic et al. disclose the claimed invention except for the claimed storing instruction and data for the computer system in the memory.

Nevertheless, Dea teaches *a step of storing* data for the computer system in the memory as the description of DRAM at column 4, lines 52-63, and furthermore Dea teaches that the video processing system 100 (computer system) utilizes executable program instructions (column 4, lines 36-51). Since examiner takes Official Notice of the commonly known in the art that processing system (computer system) stores instruction for the computer system in the memory in order for the system to retrieve and executed the programmed instruction would be within the level of ordinary skill in the art. Therefore it would have been obvious to one

having ordinary skill in the art at the time the invention was made to recognize the claimed step of storing instruction and data for the computer system in the memory in the system of Dea and Abramatic et al..

In consider claim 20, the claimed wherein computing the difference frame includes computing the difference frame in a core logic chip within the computer system is met by the compress/decompression accelerator 120 of Dea that includes the function frame difference block 220 ( column 6, lines 36-44, and column 5, lines 42-47, and FIG. 2.)

6. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208 in view of Hardiman ' 223.

In consider claim 8, Dea disclose the claimed invention except for the claimed step of performing a color space conversion on the video data.

Hardiman discloses an invention relates to compression coding of a video program. Hardiman disclose the claimed performing a color space conversion on the video data is met by the subsampler and color space converter 80 ( column 3, lines 47-57, column 6, lines 55-64, and FIG. 2). Since it was well known in the art that the color space conversion on video would recognize the benefit of properly converting the video information from a computer processed information into a displayable signal for image displaying (column 3, lines 47-57).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the advantage of performing a color space conversion on

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the video data and further realize the claimed step of performing a color space conversion on the video data as taught by Hardiman in the system of Dea.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208.

In consider claim 10, Dea discloses the claimed invention except for the claimed storing instruction and data for the computer system in the memory.

Nevertheless, Dea teaches *a step of storing* data for the computer system in the memory as the description of DRAM at column 4, lines 52-63, and furthermore Dea teaches that the video processing system 100 (computer system) utilizes executable program instructions (column 4, lines 36-51). Since examiner takes Official Notice of the commonly known in the art that processing system (computer system) stores instruction for the computer system in the memory in order for the system to retrieve and executed the programmed instruction would be within the level of ordinary skill in the art. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the claimed step of storing instruction and data for the computer system in the memory in the system of Dea.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dea '208 and Abramatic et al. '383 as applied to claim13 above, and further in view of Hardiman '223

In consider claim 18, the system Dea and Abramatic et al. disclose the claimed invention except for the claimed step of performing a color space conversion on the video data.

Hardiman discloses an invention relates to compression coding of a video program. Hardiman disclose the claimed performing a color space conversion on the video data is met by

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the subsampler and color space converter 80 ( column 3, lines 47-57, column 6, lines 55-64, and FIG. 2). Since it was well known in the art that the color space conversion on video would recognize the benefit of properly converting the video information from a computer processed information into a displayable signal for image displaying (column 3, lines 47-57).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to recognize the advantage of performing a color space conversion on the video data and further realize the claimed step of performing a color space conversion on the video data as taught by Hardiman in the system of Dea and Abramatic et al..

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yan discloses a system and method for filtering video signals.

Nakaya et al. disclose a system and method for performing video coding/decoding using motion compensation.

Jung discloses an apparatus for detecting motion vectors using moving object patterns.

Ersoz et al. disclose a displaying an interlaced video signal with a noninterlaced video signal.

Yoshida discloses an image processing apparatus and method .

Lee discloses an apparatus for detecting a foreground region for use in a low bit-rate image signal encoder.

Sahraray discloses method for detecting camera -motion induced scene changes.

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Pirson et al. disclose a method for selecting motion vectors and image processing device implementing the said method.

Wu et al. disclose a system and method for enforcing interlaced field synchronization in the presence of broken alternation in an MPEG video data stream.

Kopet et al. disclose a motion estimation coprocessor.

Werner discloses an integrated MPEG decoder and image resizer for SLM-based digital display system.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-6306 or 308-6396, (for formal communications intended for entry) and (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II,

2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linus H. Lo whose telephone number is (703) 305-4039. The

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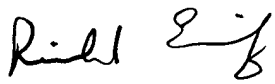
examiner can normally be reached on Monday-Thursday from 8:30 am to 6:00 pm. The examiner can also be reached on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reinhard Eisenzopf can be reached on (703) 305-4711. The fax phone number for this Group is (703) 308-5359.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

lhl LL

May 9, 2001

  
REINHARD J. EISENZOPF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600  
5-10-01